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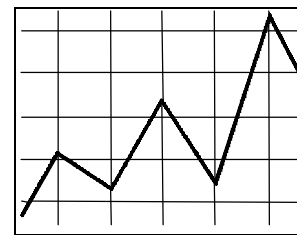
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MARKETING AND POLICY BRIEFING PAPER



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THE HOG-PORK INDUSTRY WOES OF 1998

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A sudden, severe economic storm system hit the hog-pork industry in 1998. It grew increasingly violent and culminated in a tornadic outbreak near the end of the year. Following two years with the highest two year average hog prices in history (averaging \$52.36 per cwt. for 1996 and 1997), hog prices collapsed to their lowest annual average (\$31.83) in 26 years. And, in December, the monthly average price fell to the lowest average price (\$13.92) in over 35 years - since April, 1963. Fewer than half of today's population were even alive at that time. In real (deflated) dollars, hog prices have never been lower.

What happened? Several large important factors and many smaller ones, coming together in the same direction at the same time, some related, some unrelated, set the fourth quarter tornado in motion. It was not forecast, even as late as a few weeks before the worst arrived. And once in motion, there seemed to be little that could be done. The industry (producers or packers) had little experience with anything approaching the severity of this "worst storm ever".

Pork production, like that of many commodities, is cyclical in nature. The biological nature of the product means that it takes nearly a year to produce. It takes capital to be assembled, breeding stock to be obtained, a gestation period of 112 days and some six months or so to feed the animals to reach market weight. If fixed capital such as new housing is required even a longer period of time is needed. While the time required to increase production, if fixed capital is needed, is not as long as with some other commodities (cattle, oil, coal, etc.), hog production increases do take many months. Similarly, hog output decreases take time. Hence, a hog production cycle that averages nearly four years in length.

Important also is the fact that hog production, biologically, can be increased substantially in a year or so in response to the right set of economic and other stimuli. A female hog (sow or gilt) can produce 20 to 25 offspring per year. Thus, unlike cattle, a relatively small increase in the breeding stock can produce a very large increase in pork production a year or so later.

Hogs and pork are quite perishable products. Hogs must be marketed within a period of a week or so or lose quality and value. Fresh pork is even more perishable and must be marketed within a few days. The pork industry can be pictured as a giant conveyer line with large quantities of a very perishable product needing many buyers and consumers very quickly and in a continuous fashion. Important surprises such as greater or smaller quantities, or new positive or negative information on the nutritional qualities or the safety of pork can have immediate price consequences.

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What did happen in late 1998 and what can be learned from the experience?

VERY LARGE INCREASE IN PORK PRODUCTION. Pork production in the U.S. increased 10% during calendar 1998, the largest annual increase in 19 years. In those 19 years, pork production in the U.S. had actually decreased eight times. Only twice in the most recent 14 years did pork output increase by more than 4%. Thus, the increase was unusually large. In terms of the increase in the number of pounds of pork produced, the increase in 1998 was the second largest in history, exceeded only in 1979.

RAPID GROWTH OF MEGAPRODUCERS. The rapid growth of very large hog producers in the 1990's seemed to almost guarantee that some time, some year, pork production would race ahead of pork demand and result in a very low price year for hogs. That year apparently occurred in 1998.

It is estimated that the number of hog producers controlling more than 10,000 sows rose from 31 in 1994 to 50 in 1998. The proportion of the U.S. sow herd contained within these very large producers rose from almost 19% in 1994 to nearly 39% in 1998. The total number of these very large producers grew by 61% in these four years and the number of sows they controlled more than doubled. However, from 1994 to 1998, the rates of growth in sow numbers for the various farms, packing companies, feed companies, swine breeding firms and farm cooperatives in this very large producer group varied widely from none to several fold.

According to the USDA, the number of hog operations with more than 5,000 hogs in inventory on December 1 rose 84% from 990 in 1993 to 1,825 in 1998. The number of farms with more than 2,000 hogs but less than 5,000 hogs in those years rose 41% from 3,390 to 4,770. The number of farms in smaller size groups declined 50% from 213,680 to 107,695. The number of large farms rose from 1993 to 1998 in almost all Mid-West states, North Carolina and other states scattered throughout the country.

The proportion of U.S. hogs on the farms in the largest size group, over 5,000 hogs on December 1, rose from 18% in 1993 to 42% in 1998. The proportion in the second largest size group (2,000-5,000) rose from 15.5% to 21.5% in those five years. The proportion on all other smaller farms declined from 66.5% to 36.5% in that time.

RECENT HIGH HOG PRICES. A period of unusually high hog prices in 1996 and 1997 preceded and was probably one of the causal factors for the large increase in pork production in 1998. From March, 1996 through September, 1997, hog prices averaged over \$48.00 each month, averaging \$54.57 for the 19 month period. The only other time in history that a similar unbroken string of "over \$48.00" hog prices had occurred was also a 19 month period from February, 1990 through August, 1991, when hog prices averaged \$54.00.

RAPIDLY FALLING FEED PRICES. After reaching an all time record high of \$4.43 per bushel in July, 1996, corn prices quickly fell to \$2.66 four months later and continued to decline to under \$2.00 through the autumn of 1998. As of January, 1999, corn prices have been below that of the same month of the preceding year for 26 of the last 27 months. In addition, soybean meal prices declined rapidly during the autumn of 1997 and throughout 1998 to the lowest level in more than a decade. Feed costs constitute about two-thirds of the cost of producing hogs. Increasingly, commercial pork producers purchase all or a huge portion of their corn and soybean meal. It is possible that feed costs have become an even more important factor in influencing decisions to produce more or fewer hogs compared to earlier decades. When hog production and corn and soybean production were integrated activities on many Mid-West hog farms, hog prices were of prime importance because much of the corn and soybeans produced were marketed through hogs.

THE SURPRISE ELEMENT. The size of the fourth quarter, 1998 hog marketings surprised the industry. The quarterly USDA survey of hog producers taken on September 1, 1998, and reported late in that month as the Hogs and Pigs Report, indicated that the number of hogs kept for marketing on U.S. farms was up 3% from one year earlier. However, the number of hogs slaughtered during the fourth quarter was up 10% from the preceding year. In researching the 48 quarterly survey results during the 12 years from 1987

through 1998, in no quarter did the hog marketings in the succeeding quarter exceed the number of market hogs on farms by seven percentage points. As would be expected, in half of the years, changes in hog slaughter were lower than the changes reported in the number on farms. The industry, from producers to packers to processors to retailers to food service and institutional feeding establishments were surprised with the number of hogs marketed during the fourth quarter. Hog slaughter in September was up only 7% and the increases were declining from 11% in August and 13% in July. The industry was not prepared for the 5,239 million pounds of pork produced during the fourth quarter, up 13% from the third quarter, up 10% from a year earlier and up 7% from the previous record quarter in late 1994. About one percentage point of the 10% increase from 1997 was accounted for by the increase in hog imports from Canada.

RECORD LARGE PORK PRODUCTION. Pork production in 1998 was a record high, at 18,981 million pounds, up more than 10% from 1997 and up nearly 7% from the previous record high of 17,810 million pounds set in 1995. As stated above, pork output in the fourth quarter was also a record by an equally wide margin.

DECREASE IN HOG SLAUGHTERING CAPACITY. The largest increase in hog production in 19 years is very serious, but when it is combined with an unexpected 4% decrease in hog slaughtering capacity, the situation becomes even more serious. That is what happened last summer when Thornapple Valley closed its large plant in Detroit. The plant slaughtered about 14,000 hogs per day but sustained losses in the previous several years. This led management to suspend slaughtering operations rather than add additional debt to keep it open.

During non-holiday weeks, hog slaughter averaged 1,731,500 per week in June and 1,804,200 in July. Thus, the Thornapple Valley capacity of 70,000 hogs in five days was about 4% of the industry's needs.

Earlier in February and March of 1998, the hog slaughtering plants of Dakota Pork in Huron, South Dakota and Fisher Packing in Louisville, Kentucky had closed. They had a combined slaughtering capacity of 10,500 hogs per day. In early 1997, plants were closed in Council Bluffs, Iowa, Worthington, Indiana and Moultrie, Georgia and a shift closed in a large plant in Columbus Junction, Iowa. These closures reduced capacity by 23,400 hogs per day. Thus, well over 10% of the industry capacity was closed in 1997 and 1998 due to poor returns.

While the pork industry has been a growing industry, the hog slaughtering sector has not enjoyed similar expansion. The record number of hogs slaughtered in 1998 was only 5% greater than the number slaughtered in 1980. In that time, pork output grew 16%. Hogs are marketed at heavier weights, the proportion of the hog accounted for by the carcass has increased and the proportion of lean pork in the carcass has grown considerably. Much more pork is produced per hog.

The hog slaughtering industry adjusted to the Thornapple Valley departure in mid-1998 by increasing the number of hogs slaughtered on Saturdays. The average Saturday slaughter during non-holiday weeks of 28,000 in June and 47,250 in July, grew to 99,000 in August, 152,000 in September, 179,750 in October, 256,667 in November and 263,000 in December. The largest Saturday slaughter was 309,000 on November 28 and 302,000 on December 19. The pre-1998 record was 275,000 on November 25, 1995. If the industry could have had Thornapple Valley's capacity to slaughter 70,000 hog per week during those months, the need for Saturday overtime slaughtering would have been reduced considerably.

The slaughtering industry that remained also increased its ability to slaughter more hogs during weekdays from September to mid- December despite the normal seasonal increase in the average weight of hogs marketed. Non-holiday weekday slaughter averaged 372,190 hogs in September, 378,524 in October, 384,167 in November and 390,357 up to December 21 in December with a peak of 395,000 hogs reached on December 16, the second largest day in history, exceeded only on December 1, 1983.

The long, continuous six-day overtime operations of slaughtering, cutting, boning and shipping, on two shifts in many plants, took its toll on personnel, equipment and the industry's ability to effectively merchandise and promote a perishable commodity during the fourth quarter.

Hog slaughter historically reaches its seasonal low in the summer and rises to its high during the cold weather months. This seasonality has been reduced in recent decades. After World War II, from 1947 through 1949, the average increases in hog slaughter in non-holiday weeks averaged 163% from the summer low to the winter high. In the 1950's, it rose an average of 101%. In the 1960's, it rose an average of 48%; in the 1970's, 46%; in the 1980's, 33%; and in 1990-1997, 28%. Historically, the slaughtering industry has maintained some excess capacity during much of the year to accommodate peaks in hog marketings. This has been less true in recent years as the seasonality of hog marketings has been reduced.

In 1998, hog slaughter rose 33% from the low summer week (1,698,000 from June 1-6) to the all time record high week (2,265,000 from December 14-19). This was the largest percentage increase in seven years and the largest total weekly slaughter increase (567,000) in 19 years. Considering the loss of the Thornapple Valley slaughter plant, the over 38% increase in hog marketings relative to the industry slaughter capacity was even more severe. It certainly added to the low hog price problems in December.

RECORD LARGE FROZEN PORK INVENTORIES. It is relatively expensive to freeze and hold pork in frozen storage and normally only about 2%-3% of total annual pork production is held in frozen inventories at any one time. However, substantial quantities of hams, bellies, trimmings and spareribs are in freezers at times and can have considerable impact on wholesale prices. Normally, large holdings of frozen pork depress pork and hog prices and small inventories help to push prices higher.

Frozen pork stocks have been large and exceeded year ago totals each month since February, 1997. In records going back to 1946, frozen pork stocks set new record highs for each of the last six months of 1998. By December 31, they were 46% larger than a year earlier and 61% larger than two years earlier. The average amount of pork in freezers during 1998 reached a record high of 430 million pounds, up 15% from 1997 and up 23% from 1996. These record large frozen stocks weighed heavily on pork prices in 1998 as packers, processors and marketers struggled to merchandise 10% more pork to a population that had increased less than 1%.

RECORD OTHER MEAT PRODUCTION. The record and unexpectedly large pork production also met strong competition from record large production of other meats. The 10% increase in pork output had to be marketed in the face of record high competitive meat production. Broiler output increased 2% in 1998, including a 2% gain in the fourth quarter, to a new annual record of 27.8 billion pounds. Broiler output has doubled in the last 13 years and fortunately for pork, the 2% increase in 1998 was the smallest annual percentage increase since 1982. Beef production was up 1% in 1998 and also up 1% in the fourth quarter to set a new record high for the year, erasing a standard which had stood for 22 years. It is extremely rare for the peak of the beef production cycle and the peak of the pork production cycle to coincide. Yet, that is what happened in 1998.

FAVORABLE WEATHER. With much improved housing for animals, weather is not as important a factor as in previous decades. However, the weather has been very favorable for hog production for the last several years. The very mild winter of 1997-98 and the very mild November and December of 1998 probably added to pork output. The mild winter may have contributed to the saving of larger litters of pigs in better physical condition with the ability to gain weight more quickly. Producers, relieved of some of the tasks of snow removal and thawing water lines, may also have been able to spend more time managing their sow herd and able to slightly increase the number of sows to be bred and farrowed. If so, this would have added to late 1998 marketings. If favorable weather throughout the year allowed hogs to gain weight faster and reach market weight only three days earlier in 1998, it would have contributed nearly 1% or nearly one million additional hogs to the marketplace during the year.

PRODUCTIVITY INCREASES. The continued advances in management, nutrition, genetics, housing and the ability to maintain healthy animals adds a little to the increase in pork production each year and almost certainly contributed to gains in output again in 1998.

OUTSIDE CAPITAL. Considerable resources from outside the traditional hog industry during the 1990's added to the industry capacity to produce and to the 1998 price problem. Some of the capacity increase came from integration, some from packer contracts and some from outside the agricultural industry,

sometimes called "Wall Street money". Some of the increase from integrators came from investors with previous experience and success in the poultry industry. It is possible that some expansion came from conventional producers and outside investors fearing future more stringent environmental regulations on production.

Whatever the reasons, the geography of hog production has changed considerably. On December 1, 1998, the number of breeding stock on U.S. hog farms had declined 6% or 389,000 head from four years earlier at a similar time in the hog production cycle. However, large increases were noted in certain non-traditional hog producing states. The number in Utah increased 329%; in Wyoming, 233%; in Colorado, 68%; in Oklahoma, 155% with smaller increases of 9% to 20% in North Dakota, Texas and Pennsylvania. The only Mid-West states to show increases were Minnesota and Kansas, both up 13%. The second largest production state, North Carolina, was up 28%. Double digit decreases were noted in almost all traditional Mid-West states with the 43% decline in Wisconsin being the largest percentage decrease of the 20 largest "hog states".

On September 1, 1998, just before the fourth quarter price debacle, of the 7,487,000 increase in the number of market hogs in the U.S. from September 1, 1990, 6,870,000 or 92% of the increase was accounted for the state of North Carolina. Wisconsin numbers had declined 37% during that period. Only Iowa, Minnesota and Missouri in the Mid-West showed increases.

However, traditional Mid-West hog producing states did contribute to the increase in hog production that led to the collapse of hog prices in the fourth quarter of 1998. The USDA September survey showed sizable increases in the number of market hogs on farms on September 1, 1998 compared with a year earlier in many Mid-West states. The following increases were recorded: Iowa, 11%; Ohio, 14%; South Dakota, 10%; Minnesota, 8%; Indiana, 7%; Illinois, 6%; and Kansas, 2%. North Carolina showed an increase of 4%. Decreases included Wisconsin, down 9%; Missouri, down 6%; Nebraska, 4%; Michigan, 2%; and Arkansas, down 13%.

INCREASE IN CONTRACTING. The increase in the use of various kinds of price and production contracts during the last several years may have tended to contribute to the recent oversupply problem. Both producers and lenders may have been encouraged to increase production with varying degrees of price protection which in the aggregate led to oversupply and low industry prices. It is not known how extensive the use of various contracts has become but in Iowa and Southern Minnesota in recent weeks only about one-third of the hogs are reported by the USDA to have been sold on a negotiated basis. This may indicate that about two-thirds of the hogs in that important area are marketed under some form of contractual arrangement.

The increase in contracting protected some hog producers to varying degrees from the worst of the hog price declines. It also prevented some packers from enjoying the economic benefits of purchasing some or all of their hogs at the extremely low market prices. Unlike past cycles of low hog prices, there were considerable differences in the effect of low prices on the balance sheets of some farmers and packers which could have a significant effect on the relative competitiveness of the various farms and packing firms in the future.

TAIWAN HOOF AND MOUTH. The outbreak of hoof and mouth disease in Taiwan in late March of 1997 led to the suspension of exports from that country to Japan and other countries and to the elimination of much of their hog herds. This may have encouraged some expansion plans in the U.S. in order to export more pork to replace Taiwan's extensive exports to Japan and other importing countries. It is not known to what extent the outbreak in Taiwan may have reduced total demand for pork in Japan, but substantial increases in their imports from the U.S. have not yet materialized. Exports of U.S. pork to Japan in 1998 increased about 8% from 1997 and were about the same as in 1996. In 1998, they represented about 2.7% of U.S. production and about 40% of total U.S. pork exports.

WORLD ECONOMIC PROBLEMS. Declining economic conditions in Asia and sluggish conditions in Europe and other parts of the world combined with rising pork production in the U.S., Canada and some other exporting countries led to lower hog and pork prices in almost every part of the world in 1998.

IMPORTS OF CANADIAN HOGS. Increasing hog imports from Canada in recent years have added to the U.S. pork supply. Canadian hog production has grown faster than its slaughtering capacity in recent years. Strikes in key meat plants and a severe ice storm in Quebec last January led to further exports to the U.S. Total imports from Canada reached nearly four million hogs in 1998 or nearly 4% of the U.S. slaughter and up about one million hogs from 1997. Prior to 1995, U.S. imports from Canada averaged about one million head per year.

THE CALENDAR. Even the calendar conspired against the pork industry in December. The rather late Thanksgiving holiday on November 26 and the placement of Christmas Eve and Day on Thursday and Friday are never favorable for pork. The length of time between the holidays for the marketing, slaughtering and processing of hogs is shortened. The number of weekend shopping days for food between the holidays is also shortened.

The Christmas holiday is the most important day of the year for hams, the most important single cut of the hog. Hams must enter the processing line by some date in early December to get through retail warehouses to stores in time for Christmas food shoppers during the December 18-24 week. A late Thanksgiving date squeezes that important time span.

Depending on the date of Thanksgiving, there are three or four full weeks before Christmas. Normally, hog slaughter declines during those weeks, partly because the demand for hams and, therefore, the demand for hogs declines since hams can not be processed and reach stores in time for pre-Christmas shopping. For whatever reason in 1998 - excellent weather, selling hogs for tax reasons in December, panic and liquidation of hog herds - the slaughter of hogs increased during the three post-Thanksgiving weeks instead of decreasing and the pork, a perishable product, had trouble finding enough commercial buyers at satisfactory prices.

In the years since World War II, hog slaughter declined from the first week following Thanksgiving to the second week and fell again from the second to the third week 33 of the 51 years. In only two years, 1950 and 1997, did the slaughter numbers in the third week exceed both of the two prior weeks. In 43 of the 51 years, slaughter in the third week was lower than both of the preceding weeks. Yet, in 1998, hog slaughter rose 47,000 head from the first week to the second week following Thanksgiving and another 63,000 head to the third week (December 14-19) to an all time record high of 2,265,000. Huge hog marketings continued despite rapidly falling prices, a situation which usually, in the short run, discourages farmers from shipping hogs to market. Why the changed behavior and changed pattern of marketings? Were the hogs delivered, at least partially, by producers whose hogs were protected by prior contracts at higher prices and which were gaining weight at rapid rates because of the abnormally warm weather of November and December? Average weights of hogs slaughtered in December were surprisingly high and the highest on record. Were the producers concerned about the lack of hog slaughtering capacity during the following two weeks because of the Christmas and New Years Day holidays and brought their hogs to market?

Wholesale ham prices fell from \$40.00 per cwt. on December 10 to \$19.00 on December 17 and to \$12.00 on December 23. Pork loins fell from \$64.00 on November 30 to \$38.00 on December 17. This low price stimulated post-Christmas store promotions and prices rallied to \$88.00 by January 12. Similarly, another fresh pork cut, Boston butts, fell from \$40.00 on November 30 to \$17.00 on December 15 and then rallied to \$55.00 by January 11. A very cold weather pattern during the first two weeks of January possibly delayed some hog marketings and may have contributed to the price recovery.

PRICE SPREADS. Some contend that the slow adjustment of retail and food service pork prices to changes in hog prices cause hog prices to drop too low in times of abundant hog marketings. There is a time lag between changes in hog prices and changes in pork prices to consumers.

Published live hog prices fell from July, 1997 at a monthly average of \$58.80 per cwt. to December, 1998 at \$13.92. Pork prices peaked in August, 1997, a month later than the hog price peak, at \$2.497 per pound and fell to \$2.334 in January, 1999. Earlier, hog prices rose from a low of \$28.03 in November, 1994 to \$57.91 in May, 1996. Pork prices bottomed one month later than hogs at \$1.993 in December, 1994 and

rose to peak at \$2.478 in September, 1996.

Some volatility would likely be reduced if price changes could be reflected to consumers more rapidly. The length of the hog production cycle could also be slightly reduced. Hog prices would probably reach earlier and lower peaks and earlier and higher lows. This would entail retailers changing prices, up and down, more rapidly. It would necessitate changing menu prices more often and the much faster development of pork promotions and supporting television, radio and print media ads.

During the pork problems of 1998, it was very difficult to relate to published price spreads since the average price of hogs actually received by all hog producers was probably above the average daily negotiated price published by the USDA because of the various contractual arrangements in the industry. The various published shares of the consumers' pork dollar among farm producers, hog slaughterers and pork marketers were probably less accurate than in the past because of the considerable variation in contractual arrangements among the industry participants. The value from long published price spreads has probably been reduced somewhat by the recent proliferation of hog price contracts.

WHAT CAN BE LEARNED? What can be learned from this most unusual year and most difficult year for hog producers? Following are some observations.

High employment and high consumer incomes do not guarantee good times for pork producers. Unfortunately, neither does the production of high quality pork. The quality, consistency and leanness of pork has probably never been higher and yet hog prices fell apart.

Pork's competitors are not just beef, chicken, turkey and fish, nor just all other foods, but all goods and services offered to consumers. The competition for consumers' spendable dollars is extremely intense. The proliferation of goods and services and the intensity of their promotion to consumers in the market place in recent years put considerable pressure on pork that did not exist some years or decades ago. Like productivity increases, this is a long run trend that was not an important factor in 1998 but which continued to add downward pressure in an already difficult situation.

Large increases in pork production in excess of population gains or in excess of the ability of the industry to process and merchandise the product should be avoided.

Pork prices are volatile and hog prices are even more volatile. Narrow marketing price spreads when live hog prices are relatively high can force packers, and their capacity to process pork, out of business. Alternatively, wide marketing price spreads when hog prices are low can force hog producers out of business causing pork production shortages in the future and continuing the excessive volatility of the cycle. Better, more timely market and outlook information should help to alleviate the problem. However, an easy cure is probably quite difficult to achieve. The long production period for hogs, the perishability of the product, the effect of holidays on demand and processing schedules and the effect of weather on crops and feed prices as well as on hog production make the task of stabilizing prices a large challenge for the industry.

The long standing trend toward greater consumption of pork outside the home in restaurants and institutional establishments probably decreases the ability of the industry to achieve rapid price and promotional responses to either surprising surpluses or shortages of pork in the marketplace. In many cases, menus, menu pricing and promotions are made months in advance and quick adjustments may be even more difficult than in retail stores through which most pork moved in earlier times.

Freer trade among countries may not cure volatility; indeed, in some cases, it can exacerbate volatility. The experience with disease, labor disputes, ice storms and currency exchange variation in recent years indicates that international trade can also be fraught with surprises, not all of which are favorable.

Volatility and the trend toward specialization lead to the need for price and income protection for many hog producers and other industry participants. Various kinds of contractual relationships have been established in the last several years. It is too early to adequately judge the total effect of these on industry

performance. Some suggest the need for more formal integrated arrangements. However, this may not insure economic success. In the turkey industry, which is about one third of the size of the pork industry, almost total integration for many years did not prevent difficult economic times during the last several years and some exiting from the industry. According to USDA estimates, the turkey industry lost an average of \$6.12 per cwt. producing turkeys over a ten quarter span ending with the second quarter of 1998. In the last 25 years of records, the worst previous loss period resulted in a loss of an average of \$3.53 per cwt. during a six quarter span in 1983-84.

Forecasting commodity prices and supplies continues to be difficult. Despite the advances made in communication, computation and information, the industry was surprised, perhaps even shocked at what happened to hog prices in 1998 and particularly what happened in December. The Chicago Mercantile Exchange contract for December, 1998 hog carcasses was trading in January, 1998 in the \$55-57 per cwt. range. From February through June it traded in the \$50-55 range. It then fell off to trade in the \$35-45 range in September and October. The decline quickened to the \$27-30 area by late November. Then in the last seven trading days in December it collapsed to close near \$21. Obviously, the consensus of participants during the year did not anticipate the December situation. Producers who hedged their production when hogs slated for late 1998 marketing when the hogs were bred or when they farrowed were well served and were able to successfully ride out the storm.

The situation was particularly painful for unhedged Wisconsin hog producers, since as a group they did not contribute to the rapid increase in production in 1998 and yet absorbed the same price punishment as others. According to the most recent USDA quarterly report, the number of hogs on U.S. farms on September 1, just before the final surge in hog marketings and price collapse, was up 6%. However, the number on Wisconsin farms was down 9%.

Hopefully the economic tornado has passed. Storm clouds are still with us. The future is still unknown. The unusual coming together of causal factors, almost all additive in the same direction, caused unusual economic destruction in 1998. Hopefully, similar adverse forces will not collectively descend on the industry again.